Claims

We claim:

Sub a1

1. A liquid crystal display, comprising:

a polarizer operably coupled to a beam of incident light to pass a beam of polarized light having a polarization axis;

a pixel sequence operably coupled to said polarizer and said beam of polarized light, wherein said pixel sequence comprises liquid crystal display pixels optically aligned in series with said beam of polarized light, wherein an angle of said polarization axis may be varied by each of said pixels; and

an analyzer operably coupled to said polarizer, said pixel sequence, and said beam of polarized light to pass a gray-scale portion of said beam of polarized light from said pixel sequence as a function of said angle.

2. The liquid crystal display of claim 1, further comprising a gray-scale control operably coupled to each of said pixels for varying said angle.

3. The liquid crystal display of claim 1, further comprising an

array of said pixel sequences arranged into rows and columns operably coupled to said polarizer, said beam of polarized light, and said analyzer.

4. The liquid crystal display of claim 2, wherein said gray-scale control includes electronically programmable driver and interface circuitry for calibrating said pixel sequence to a gray-scale standard.

5. The liquid crystal display of claim 2, wherein said gray-scale control includes electronically programmable driver and interface circuitry for correcting a failed pixel within said sequence.

6. The liquid crystal display of claim 1, wherein said each of said pixels is formed on a transparent substrate.

7. The liquid crystal display of claim 6, wherein said substrate comprises sapphire.

8. The liquid crystal display of claim 1, wherein said pixels are formed in an active matrix liquid crystal display.

9. The liquid crystal display of claim 4, wherein said gray-scale control is programmed to a color having a corresponding

gray-scale value.

10. The liquid crystal display of claim 1, wherein said pixels comprise a liquid crystal material, wherein said liquid crystal material is one of nematic, supertwisted nematic, or ferroelectric liquid crystals.

11. The liquid crystal display of claim 2, further comprising:

transparent substrates, wherein said gray-scale control further comprises drive circuitry formed on said substrates,

transparent pixel electrodes operably coupled to said drive circuitry, wherein said pixel electrodes are formed in a transparent display region on each of said substrates; and

a liquid crystal material operably coupled to said transparent display regions to form said pixels.